

DOCUMENT RESUME

ED 212 287

IR 009 994

AUTHOR Larsson, Rolf; Sunneback, Jan
TITLE 3RIP Version 4.0 (Including the EURONET Common Command Language).
INSTITUTION Royal Inst. of Tech., Stockholm (Sweden). Library.
REPORT NO TRITA-LIB-4071
PUB DATE Oct 81
NOTE 48p.; For related document, see ED 196 437.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Computer Programs; *Databases; Foreign Countries; *Information Retrieval; Man Machine Systems; *Online Systems; *Programing Languages
IDENTIFIERS *3RIP Text Data Base System; Europe; *Search Commands

ABSTRACT

Intended for users of the 3RIP text retrieval database, for retrieval system users with a knowledge of the EURONET Common Command Language (CCL), and for 3RIP system managers, this booklet provides a complete description of the 3RIP retrieval system command language. New functions and recent changes in the 3RIP system are summarized, system passwords and command modes are reviewed, the system's standard command vocabularies are described, and the various searching operations of the system are outlined. Record output, system default and format options and designations, the deletion and editing of records, and the development and use of private command vocabularies are also discussed. A section containing advice to managers of 3RIP retrieval systems is also included. System commands are listed in five tables and an index is attached. (JL)

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REPORT TRITA-LIB-4071

OCTOBER 1981

3RIP VERSION 4.0

(INCLUDING THE EURONET COMMON COMMAND LANGUAGE)

Rolf Larsson
Jan Sunnebäck

Paralog AB
Stockholm, Sweden

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INTRODUCTION

Early in 1980 Paralog AB made a study of how the EURONET Common Command Language for bibliographic retrieval (CCL) might be used when searching with the text data base system 3RIP. In the report of the study (1) a new 3RIP command mode emulating the CCL was specified. However, after discussions with Alan Negus, the author of the CCL, this specification was revised, and it was decided that the CCL mode of 3RIP should conform more closely to the document defining the CCL (2).

In February 1981 a first version of 3RIP including the CCL command mode was made available to a group of experienced documentalists whose observations and opinions have been taken into account in the forming of the system described in this report.

The report is primarily intended for 3RIP users with a fair knowledge of the standard version of the system, for retrieval system users knowing the CCL, and for 3RIP system managers.

It is not necessary to regenerate existing data bases. A few changes to the control files handled by the system managers will make it possible to use the new version. It is available at Medicindata in Gothenburg, where it may be used on a number of bibliographic data bases of different sizes.

The new version uses the help messages of the standard system, and these will in many cases be misleading, but a new help system will be ready before the end of 1981. However, as the new version is in many ways superior to the old one we do recommend experienced users of the Gothenburg system to change over to the new version, and their comments and views on it will be welcomed by us.

Acknowledgments

We wish to thank Alan Negus and all the users of 3RIP who by their comments on and criticism of the system have enabled us to improve it.

References

1. Larsson, R.: On Implementing the Common Command Language within 3RIP, Report TRITA-LIB-4067, Stockholm 1980.
2. Negus, A. E.: EURONET Guideline: Standard Commands for Retrieval Systems, Final report to DG XIII of the Commission of the European Communities, London 1977.
3. Paralog AB: 3RIP - a System Manual, Stockholm 1980.

NEW FUNCTIONS AND CHANGES IN SUMMARY

3RIP can be used in three different command modes:

- OWN the normal mode which can be restricted to searching or to editing and file handling;
- CCL a search mode adapted to the EURONET Common Command Language; and
- MENU a simple menu-driven search mode.

Controlled vocabularies created and maintained with the system can be used as search aids. Thesaurus files containing conventional thesauri are examples of such controlled vocabularies.

DISPLAY is a new command causing related terms from the vocabulary file or from a thesaurus file to be shown and processed in much the same manner as pattern expressions preceded by the modifier SELECT. No set name is created, however.

DEFINE is another important new command. Using it output formats and order records are created in a simple manner and defaults are set or changed.

The functions of the commands PRINT and TYPE have been transferred to

SHOW causing records of a set or a file to be output on the user's terminal; and

PRINT causing records of a set or a file to be output on the line-printer (default), an ordinary textfile, or a 3RIP textfile.

Individual records can be selected for output in SHOW and PRINT orders (e.g. the third record of those hit in a data base or every tenth record). Format and sort specifications may also be included.

If the command DELETE (or its synonym PURGE) is entered without arguments it will be applied to the last set.

Similarly, commands applicable to no more than one set at a time (e.g. SHOW, PRINT, SAVE, and TRACE) are normally all applied to the last set. If some other set is to be processed then the 3RIP-symbol SET must be given in the order followed by the number or the name of the set.

In search orders without an initial search expression a reference to the last set is supplied by the system.

Numeric restrictions can be applied in a simpler manner than before, as they can be given directly without entering the command RESTRICT.

SAVE and RUN orders without a file specification use a default order file, and in general the default handling is much improved.

The output produced by SAVE and TRACE orders may be limited to search orders given by the user (i.e. those generated by the system are suppressed).

Supplementary information needed for some commands (such as the record specification for the file handling command DIR) can be given directly and not only in response to prompts from the system.

CHANGE is used to rename or delete individual symbols in the command vocabulary of the OWN mode, or to define synonymous 3RIP-symbols.

On entry to 3RIP the system looks for a file associated with the password just given. If such a file exists (because of an intentionally or unintentionally interrupted search session) the system restarts itself with the file letting the user resume the interrupted search.

Statistics on the usage of the system and of the available data bases may be logged on an account file handled by the manager of the system.

PASSWORDS AND COMMAND MODES

Entry and restart

A legal password given on entry to 3RIP connects the system to an entry record. This is done with a hashed transformation of the password. The record, residing on a file controlled by the manager of the system, specifies the access rights associated with the password and tells how the system is to be initiated.

3RIP can be run in three different command modes:

OWN the normal mode which can be restricted to searching or to editing and file handling;

CCL a search mode adapted to the EURONET Common Command Language; and

MENU a simple menu-driven search mode.

The 3RIP demonstration setup described in the first part of the chapter SEARCHING can be accessed with six public passwords:

Password Mode entered Transformation Restart file Default order file

OWN	OWN	P253831	P25383.RST	P25383.RUN
LEWIS	OWN	P249274	P24927.RST	P24927.RUN
CCL	CCL	P107448	P10744.RST	P10744.RUN
ALICE	CCL	P257530	P25753.RST	P25753.RUN
MENU	MENU	P220127	P22012.RST	P22012.RUN
CARROLL	MENU	P174866	P17466.RST	P17486.RUN

The password transformation is used in the names of two files, the restart file and the default order file.

On entry 3RIP looks for the restart file in the user's file space. If there is no such file a new file having its name is opened, otherwise the existing file is used. Search orders given while running 3RIP are stored in the restart file together with the sets created by the orders.

On exit from the system the user is normally asked whether the search is to be resumed later on, and if the answer is yes the restart file is retained. If it is kept under the name suggested by the system then 3RIP will restart itself automatically with the file the next time the user enters the system with the same password. The manager of the system may exclude this possibility, however.

Thus a search can be interrupted and continued whenever is convenient. Similarly, if a search is aborted by a communication or system failure the restart file is kept and used on the next entry to the system. Then a few of the most recent sets may be lost, however.

Command mode changes

Within the OWN mode the command mode can be changed with the orders:

- * search
- * edit
- * own

They make 3RIP enter the SEARCH submode, the EDIT submode, and the unrestricted OWN mode, respectively.

In orders given in the SEARCH submode or the EDIT submode the command vocabulary is restricted to the subset of reserved words (3RIP-symbols) relevant to searching or to editing and file handling, respectively. The symbols recognized in the unrestricted OWN mode, in the SEARCH submode, and in the EDIT submode are listed in the tables 1, 2, and 3 in the chapter STANDARD COMMAND VOCABULARIES.

In the unrestricted OWN mode it is also possible to give orders such as

- * ccl
- * menu

changing the command mode to that named in the order.

Similarly, a CCL or MENU mode order consisting of nothing but the 3RIP-symbol OWN will make the system enter the unrestricted OWN mode.

Selection mode

In search orders given in the OWN mode the processing of pattern expressions is governed by the selection mode. It is normally ALL, making the system locate and combine all matching terms (up to a given number) without displaying them. However, it can be set to SELECT, making the system display the terms and combine those selected by the user. The selection mode can be changed with the orders

- * select
- * all

making the system switch to the named selection mode.

STANDARD COMMAND VOCABULARIES

The tables 1 to 5 below show in alphabetical order reserved words (3RIP-symbols) from the symbol records SYM_OWN, SYM_CCL, and SYM_MENU in the control file ALICE.MAS of the 3RIP demonstration setup. Alternative symbol forms (synonyms) are given followed by their normal forms within parentheses. The names of data bases and field labels are defined for each user in his entry record, and as they become 3RIP-symbols on entry to the system the two entries data base names and field labels are included in the tables as a reminder of this fact.

The OWN mode

OWN is the basic command mode. Anything that can be done in either of the other command modes can also be done in OWN, where 3RIP-symbols may be abbreviated with . making for example OUT. and OUTFILE equivalent in orders.

(	)	.	..
... WP	... WS	=	...
ALL	* ANALYSE	AND	ACCOUNT
BACKUP	C	CC	AND NOT (NOT)
* CHANGE	CLOSE	CREATE	* CCL
<u>data base names</u>	DEFINE	DELETE	D
DISPLAY	DUMP	EDIT	DIR
F	<u>field labels</u>	FORCING	EXIT (STOP)
FROM	GET	* GETSYM	FORMAT
I	INFILE	INFORM	HELP
LIST	LOC	MAKE	L
NAME	NEWS	NOID	* MENU
NR	OPEN	OR	NOT
OUTFILE	OWN	PACK	ORIGINAL
PRINT	PROTECT	PURGE (DELETE)	PAGE
* PUTSYM	R	REN	PUT
RESTRICT	REVERSE	ROUTINE (DEFINE)	RESTART
S	SAME	SAVE	RUN
SEARCH	SELECT	SEN	SC
SF	SHOW	SORT	SET
STATUS	STEP	STOP	STATISTICS
* SUBSET	SUMMARY	TC	STRUCTURE
* TFORM	THES	TO	TEXTFILE
VOCABULARY	W	W1	TRACE
W3 (. .)	W4 (. . .)	W5 (. . . .)	W2 (.)
WP	WS	X	W6 (.)

Table 1. Symbols recognized in orders given in the unrestricted OWN mode. Asterisks precede symbols that are recognized in this mode only.

(	)	.	...
...	...	...	...
... WP	... WS	=	* ACCOUNT
ALL	AND	AND NOT (NOT)	CLOSE
<u>data base names</u>	DEFINE	DELETE	DISPLAY
* EDIT	EXIT (STOP)	<u>field labels</u>	FORMAT
FROM	HELP	* INFILE	LIST
* NAME	NOID	NOT	NR
OPEN	OR	* OUTFILE	OWN
PAGE	PRINT	PURGE (DELETE)	R
* RESTART	* RESTRICT	REVERSE	ROUTINE (DEFINE)
RUN	* SAME	SAVE	SEARCH
* SELECT	SET	SHOW	SORT
* STATISTICS	STATUS	STEP	STOP
TEXTFILE	THES	TO	TRACE
VOCABULARY	W1	W2 (.)	W3 (..)
W4 (..)	W5 (....)	W6 (.....)	WP
WS			

Table 2. Symbols recognized in orders given in the SEARCH sub-mode of OWN. Asterisks precede symbols that are not recognized in the CCL mode.

=	ACCOUNT	ALL	BACKUP
C	CC	CREATE	D
<u>data base names</u>	DEFINE	DELETE	DIR
DUMP	EDIT	EXIT (STOP)	F
<u>field labels</u>	FORCING	FORMAT	FROM
GET	HELP	I	INFILE
INFORM	L	LOC	MAKE
ORIGINAL	OUTFILE	OWN	PACK
PAGE	PRINT	PROTECT	PURGE (DELETE)
PUT	R	REN	ROUTINE (DEFINE)
RUN	S	SC	SEARCH
SEN	SF	SHOW	SORT
STATUS	STOP	STRUCTURE	SUMMARY
TC	TEXTFILE	TO	W
X			

Table 3. Symbols recognized in orders given in the EDIT sub-mode.

The CCL mode

In the CCL mode an order must begin with one of the commands listed below. Their shortest recognized form is given in UPPER CASE, and asterisks denote added functions (available in the CCL mode of 3RIP although undefined in the specification "EURONET Guideline: standard commands for retrieval systems" by Alan E. Negus):

<u>Command (synonym)</u>	<u>Function</u>
Find	to enter a search order (to create a set)
Display	to display a list of related words or keywords in the available data bases or from the current thesaurus
Show	to display records of a set on the terminal
Print	to write records of a set on a lineprinter or onto a file
List (Find ?)	to display a search history (a set directory)
Trace	* to display the search history of a set
Save	to create an order record containing the search orders used to form a set
DEfine	to define an output format, to set or change default values, * to create an order record, or * to specify the default form of a command
RUN (Find Save)	to execute the orders in an order record
DELeTe (PURge)	to delete sets or order records
OPen	* to open data bases to FIND and/or DISPLAY
CLose	* to close data bases to FIND and/or DISPLAY
STatus (BASe)	to display data base information and/or * to display search status
OWN	to enter normal 3RIP command mode
Help (?)	to make 3RIP give help
NEWS	to display 3RIP news
INFO	to display general information
STOP (EXIT)	to end or interrupt a session

(	)	.	..
* ... WP	* ... WS	=	?
ALL	AND	* AND NOT (NOT)	BASE (Status)
* CLose	data base names	DEfine	DELeTe
DISK (TEXTfile)	Display	* EXIT (STOP) (*)	field labels
Find	Find ? (List)	Find SAve (RUN)	FL (SEARCH)
Format	* FROM	Help (?)	I (STEP)
INFO	* List	NEWS	* NOID
NOT	NR	* OPen	OR
OS (PAGE)	OWN	* PAGE	Print
* PURge (DELeTe)	R	* REVerse	* RUN
S (SET)	SAve	* SEARCH	* SET
Show	SORT	* Status	* STEP
STOP	* TEXTFile	THES	TO
* Trace	* VOCabulary	* W1	* W2 (.)
* W3 (. .)	* W4 (. . .)	* W5 (. . . .)	* W6 (.)
* WP	* WS		

Table 4. Symbols recognized in orders given in the CCL mode. They will not be identified unless they are relevant to the order being processed, however. Asterisks precede added symbols or symbol forms (undefined in the EURONET Guideline). The shortest recognized forms are given in UPPER CASE. It should be noted that any suitable names may be chosen for the search and format labels (denoted field labels above). Thus the labels of the guideline (FT, CT, AU, etc.) may well be used for bibliographic applications.

The MENU mode

In the MENU mode the normal asterisk prompting for an order is preceded by a menu of command alternatives open to the user. The alternatives in a menu are separated by comma, the command of an alternative is given in UPPER CASE, and it is usually accompanied by a few explanatory words within parentheses. There are three predefined menus:

1. What shall 3RIP do?
 FIND (words or keywords), DISPLAY (words or keywords), SHOW (records of a set), STOP, (give) HELP, (something) ELSE
 *
2. What shall 3RIP do?
 (show) STATUS, (change) FORMAT (for record output), LIST (a set directory), TRACE (the forming of a set), (something) ELSE
 *
3. What shall 3RIP do?
 PRINT (records of a set), DELETE (sets), OPEN (data bases), CLOSE (data bases), (use) OWN (the normal command mode), (something) ELSE
 *

The first menu is displayed on entry to the MENU mode and usually after the processing of an order. However, any one of the commands in the three menus may be given in response to any menu, and a change from one menu to the next (with the first as the successor of the third) follows on the response ELSE.

The first alternative in a menu is the default. Striking nothing but the key RETURN in response to a menu makes the system process the command of the default alternative.

Giving the command FIND (by default, by entering FIND only, or by entering FIND followed by a normal search order) makes the system enter its FIND submode. In this submode the system expects and prompts for a search order with the search prompt

* FIND

and having received and processed a search order it displays the search prompt again. This continues until nothing but the key RETURN is pressed in response to the prompt. The system then displays its first menu.

Commands may be shortened to any number of their initial characters, and in case of ambiguity the matched commands are shown in a new menu.

With the exception of 3RIP-symbols in search orders (AND, OR, field-labels, et c) other 3RIP-symbols may be abbreviated in the same manner as commands. However, if an abbreviation does not unambiguously specify a symbol relevant to the order being processed it will be regarded as a character string.

(	)	.	..
...			...
... WP	... WS	=	ALL
AND	AND NOT (NOT)	CLOSE	<u>data base names</u>
DELETE	DISPLAY	ELSE	<u>field labels</u>
FIND	FORMAT	FROM	HELP
LIST	NOT	OPEN	OR
OWN	PRINT	R	REVERSE
SEARCH	SET	SHOW	SORT
STATUS	STEP	STOP	THES
TO	TRACE	W1	W2 (.)
W3 (..)	W4 (...)	W5 (.....)	W6 (.....)
WP	WS		

Table 5. Symbols recognized in orders given in the MENU mode.

SEARCHING

Data base names and field labels

The password given on entry to 3RIP makes the system fetch an entry record (see the System Manual: 7.2). This record specifies the names of the accessible data bases and the field labels used to denote parts of their records. These names and labels are added to the command vocabulary, i.e. they become 3RIP-symbols recognized in orders to the system.

Field labels serve two purposes:

1. as search labels (search types) in search orders, where they classify keywords or words in free text; and
2. as format labels in formats, where they specify record parts for output.

Any suitable field labels and data base names may be specified in an entry record. Most of the examples used to illustrate 3RIP in the following refer to the 3RIP demonstration setup based on Lewis Carroll's best known two books. In the demonstration system:

WONDER is a data base such that each record contains a portion of the text of Alice in Wonderland and a few keywords such as the names of the creatures occurring in the text portion and the name and number of the chapter it was taken from.

MIRROR is a data base compiled in the same manner from the text of Through the Looking-Glass.

POEMS is a data base containing the poems of the two books; in each record there is a poem and a few keywords.

TEXT is both a free text search label and a format label: the former denoting words in the prose parts of WONDER and MIRROR and in the verses of POEMS, the latter denoting the text portion of a record.

PERSON is both a keyword search label and a format label denoting the creatures in the data bases and in a record, respectively.

SPEAKER is a format label denoting the speakers of a record.

CHAPTER is both a keyword search label and a format label: they relate to the names of the chapters; it is also a search label with the one keyword NUMBER to be found in each record with the chapter number as its numeric value.

TITLE is both a keyword search label and a format label: it relates to the titles of the poems in the POEMS records.

COUNT is a search label with the keywords VERSES and LINES having as numeric values the number of verses and lines in the records of POEMS; it is also a format label denoting those numeric values.

Basic command mode differences

The command modes OWN, MENU, and CCL differ little with regard to searching. In all of them a search order applies to all the open parts of the data bases, and the same basic rules hold. However, in the MENU and the CCL mode a search order must begin with the command FIND (in the MENU mode it is usually supplied by the system), after which no 3RIP-symbols are recognized in the order unless they serve to combine its parts. Searching in the two modes is moreover constrained to the selection mode ALL, but otherwise pattern expressions are specified in the normal manner (i.e. #, !, and : are used denoting any string, any single character, and any single character or none, respectively). In the OWN mode on the other hand the processing of an order starts with identifying all its 3RIP-symbols. Thus

* find trace or step

is a legal CCL mode order, and the same order in the OWN mode would be

* "trace" or "step"

Without the quotation marks the system would have assumed the words TRACE and STEP to be 3RIP-symbols instead of search terms.

Text searching

Sequences of one to five dots separated by spaces may be used in text searching instead of the search commands W2 to W6. A dot corresponds to any word or none. Thus the OWN mode search orders

* twas . . . slithy

* twas w4 slithy

are equivalent, and both would locate the line

'Twas brillig, and the slithy toves

in the data base POEMS of the 3RIP demonstration setup, where the word SLITHY follows on 'Twas in the same sentence with no more than three words in between them.

Three dots without separating spaces (...) can also be used in text searches denoting any text string (within a record). Thus the order

* o ... callay

would locate the line

O frabjous day! Callooh! Callay!

The symbols WS (and within the same sentence) and WP (and within the same paragraph) can be used in the same manner as in earlier 3RIP versions, but they are also recognized in the symbol phrases

... WS denoting any text string within a sentence, and

... WP denoting any text string within a paragraph.

Numeric restrictions

Some search orders result in the forming of a set such that one or more numeric values are associated with each record hit by the order. Using the 3RIP demonstration setup

* alice and chapter=number

would be such an order. For each record in the three data bases a numeric value, the number of its chapter, is assigned to the keyword NUMBER associated with the search label CHAPTER. In the OWN mode either of the two commands RESTRICT and STATISTICS could be applied to the set formed by the order, and

* restrict to 2, 5 to 7, from 11

would be a legal restriction order forming a new set including nothing but records from the chapters 1, 2, 5, 6, 7, 11, and 12 (the highest chapter number). However, exactly the same result would follow on

* alice and chapter=number = to 2, 5 to 7, from 11

The same sets would be formed, and the set directory (displayed after the command LIST) would look the same. However, a restriction such as that of the last order must be given at the end of the order, and an equal sign must separate it from the search order proper, which should produce a set associated with numeric values. If the last requirement is not met an error message will be given, and the restriction will be ignored, but the initial part of the order will be processed as usual.

This latter kind of restrictions can be used in all three command modes.

Elliptic search orders

In the OWN mode a search order sequence such as

* walrus# or carpenter
* and oyster:

would be legal. 3RIP inserts the number of the set created by the first order to the left of the initial AND command in the second order, and in general the system inserts the number of the most recent set whenever a search order begins with a combining command (AND, OR, NOT, ., ..., WS, et c). In the MENU and the CCL modes the set number is inserted if a combining command follows directly on an initial FIND command.

Set directories

A search history summarizing the creation of sets during a search session follows on orders such as

- * list
- * list reverse poems

Both cause a display of the search orders given by the user so far. Each displayed order is preceded by the number of the set associated with it and by a hit count. For the first of the orders the count specifies the total number of hits in all the available data bases, and for the second order it specifies the number of hits in the data base POEMS. The modifier REVERSE in the second order causes the directory data for the last sets to be shown first.

If a set specification is included in a LIST order then the displayed set directory will cover all the specified sets, thus it will include not only search orders given by the user but also search orders generated by the system (e.g. in the processing of pattern expressions). Examples of LIST orders specifying sets are

- * list all
- * list reverse poems from 10
- * list reverse all wonder, mirror

where ALL and FROM 10 are set specifications.

The display of search orders generated by the system will be suppressed if the modifier SEARCH is included. Thus the orders

- * list
- * list all search

are equivalent, and the order

- * list reverse search poems from 10

will produce a set directory limited to orders given by the user.

In the CCL mode LIST and FIND ? are synonyms with L and F? as the shortest recognized forms.

TRACE is another command used to produce set directories. It shows how the last set or a given set was formed. All the orders used to form the set are shown unless the modifier SEARCH is included. Examples of TRACE orders are

- * trace
- * trace set 10
- * trace search set 10

The first of the orders is applied to the last set, and the directory shows all the search orders (given by the user or generated by the system) used to form the set. The set directory produced by the third order shows how SET 10 was formed, but orders generated by the system are omitted from the display.

In the CCL mode TRACE can be shortened to T.

Search profiles

The orders used to form a set can be saved for later use with the command SAVE. It is applied to the last set (default) or to a given set, and all the orders used to form the set are saved, unless the modifier SEARCH is included in the SAVE order. Examples of SAVE orders are

- * save tic
- * save search set 10 tac toe

The first order creates an order record TIC containing all the orders used to form the last set. This order record is written onto the default order file associated with the password given on entry to 3RIP. The second order creates another record TAC which is written onto the 3RIP text file TOE. The orders saved in TAC are those given by the user. Orders generated by the system are ignored as are orders irrelevant to the forming of set 10.

In the CCL mode SA is the shortest recognized form of the command SAVE.

Order sequences in order records can be executed with the command RUN:

- * run tic
- * run tac toe

will thus lead to the execution of the search orders stored in the record TIC in the user's default order file and of the search orders stored in the record TAC of the file TOE, respectively.

In the CCL mode the symbol phrase FIND SAVE is a synonym to RUN.

The DISPLAY command

The command DISPLAY can be used in all search modes. A simple search expression or a pattern expression shall be given as its argument, and the command makes 3RIP show terms related to the argument expression. The terms are extracted from the vocabulary file or from the current thesaurus file, and one or more sets consisting of the occurrences of terms selected from the displays are created by the command.

An OWN mode order consisting of SELECT followed by a pattern expression and an order consisting of DISPLAY followed by the same pattern expression will be processed in the same manner, but the latter order will not make the pattern expression into a set name.

DISPLAY followed by a simple search expression makes the system enter the vocabulary file at the term nearest to the expression, and starting with this term ten consecutive vocabulary terms get displayed.

Using the demonstration setup the difference between the handling of the two types of argument expressions can be illustrated by the two orders

```
*display queen
Type: TEXT
1 <248+>    QUEEN
2 <13>      QUEENS
3 <12>      QUEEN_S
4 <15>      QUEER
5 <2>       QUEEREST
6 <1>       QUEERLY
7 <1>       QUEER_LOOKING
8 <2>       QUEER_SHAPED
9 <1>       QUENCHED
10 <27>     QUESTION
Action? /LEAVE/
```

```
* display queen#
Type: TEXT
1 <248+>    QUEEN
2 <13>      QUEENS
3 <12>      QUEEN_S
No more hits
Action? /LEAVE/
```

The default search label TEXT is applied in both the cases, but in the second example the display stops when the pattern no longer is matched by TEXT terms in the vocabulary file.

If the modifier THES is entered in a DISPLAY order the current thesaurus file will be used instead of the vocabulary file.

How to use a thesaurus file is illustrated by the example below using the thesaurus of the UNESCO data base IBE on education. The structure of the file is described in the chapter ADVICE TO THE 3RIP MANAGER.

Both the layout and the processing of the thesaurus display differ somewhat from that of vocabulary displays:

1. The codes RT, BT, and NT are used to denote related term, broadier term, and narrower term, respectively; USE and UF (used for) relate to recommended terms; and SN denotes a scope note (a comment explaining the usage of a term).
2. the response SPECIFY (which may be abbreviated to SP) provides the means to go from one term to any one of its semantic neighbours shown in the display.

In the example user responses following on the prompt "Action? /MORE/" have been underlined:

```

*display program thes
1 PROGRAMMED INSTRUCTION
  RT: 2 361
Action? /MORE/
1 PROGRAMMED MATERIALS
  BT: 2 INSTRUCTIONAL MATERIALS
  RT: 3 725
Action? /MORE/
1 PROGRAMMES
  NT: 2 COMMUNITY PROGRAMMES
      3 EDUCATIONAL PROGRAMMES
      4 EMPLOYMENT PROGRAMMES
      5 FOUNDATION PROGRAMMES
      6 HEALTH PROGRAMMES
      7 INTERNATIONAL PROGRAMMES
      8 NATIONAL PROGRAMMES
      9 REGIONAL PROGRAMMES
  RT: 10 109
  SN: * Plans of a series of intended activities, taken in the
      administrative sense.
Action? /MORE/ 2,7,9
Action? /MORE/ specify 8
1 NATIONAL PROGRAMMES
  BT: 2 PROGRAMMES
  NT: 3 GOVERNMENT PROGRAMMES
      4 NATIONAL REGIONAL PROGRAMMES
  RT: 5 109
Action? /MORE/ all
Action? /MORE/ leave
Set 3: 57 hits

```

The record associated with the term PROGRAMMED INSTRUCTION (the first thesaurus term beginning with PROGRAM) is shown, and (striking nothing but the key RETURN) the default response is given twice to the prompt "Action? /MORE/" from the system. The next two records get displayed, and the second, the seventh, and the ninth term of the display of the term PROGRAMMES are selected. After that 3RIP is asked to fetch the record associated with the eighth term of the display. All the terms of this record are selected, and finally the response LEAVE is given making 3RIP return to the normal order mode after having combined the selected terms with the command OR.

A TRACE order following on the DISPLAY THES order in the example causes its result to be summarized:

```

* trace
Set      Size  Order
  1         16  CT="109" OR NATIONAL_REGIONAL_PROGRAMMES OR
                GOVERNMENT_PROGRAMMES OR PROGRAMMES
  2         49  1 OR CT=NATIONAL_PROGRAMMES OR REGIONAL_PROGRAMMES OR
                INTERNATIONAL_PROGRAMMES
  3         57  2 OR CT=COMMUNITY_PROGRAMMES

```

The terms of a thesaurus file are not bound to any search label. However, if no search label is specified in a DISPLAY THES order then the default thesaurus label will be used. This was done in the example above with the search label CT.

In the CCL mode the command DISPLAY can be shortened to D.

The ANALYSE command

The command ANALYSE may be given in the unrestricted OWN mode only making the system show some or all of the references of a set. It is of use to the 3RIP manager when testing different ways to invert a new data base, and it may help normal users to a better understanding of what is meant by a set in 3RIP parlance.

The sequence below of orders and responses illustrates the command:

```
* alice
Set 1: 818 hits

* count=verses
Set 2: 22 hits

* 1 and 2
Set 3: 3 hits in 3 records

* 2 and 1
Set 4: 6 hits in 3 records

* analyse 3
Set      Size      Order
  4         6      2 AND 1
```

POEMS: 6 hits in TEXT

Record no	Locations (par.,sen.,word)
20	1,3,16
21	1,1,7 2,1,32 3,1,5 4,1,31
23	4,1,6

```
* analyse set 3
POEMS records: / 250 / 3
Set      Size      Order
  3         3      1 AND 2
```

POEMS: 3 (NUMERIC) hits

Record no	Values
20	1
21	4
23	7

ANALYSE is by default applied to the last set, but other sets may be processed in the manner shown by the second ANALYSE order, where the system had to prompt for a record specification, as none was supplied in the order. How to give a record specification is specified in the chapter RECORD OUTPUT.

The SUBSET command

The command SUBSET is recognized only in the unrestricted OWN mode, where it may be applied to a set (with the last set as default) creating a subset of some of its references to one of the open data bases.

- * subset mirror 42 to 90, from 195
- * subset set 5 poems 5, 8, 2, 15 to 20

are two legal SUBSET orders applied to the MIRROR records of the last set and the POEMS records of set 5, respectively. The data base names are followed by record numbers specifying the data base parts that are of interest. The command SUBSET should not be used if the command CLOSE is applicable.

RECORD OUTPUT

There are two closely related output commands, SHOW and PRINT. They can be used to select records from data bases or other 3RIP text files, to format the selected records, and to output them. Records are selected and formatted in the same manner for both the commands, but SHOW sends the output to the user's terminal, while PRINT sends it to a lineprinter or to a file.

Record specification

Normally SHOW and PRINT are applied to some or all of the records of the last set. The records of some other set get processed only if the set is specified in the order by the 3RIP-symbol SET and the number or the name of the set directly after the command (in the CCL mode S is a synonym to SET).

The number of records to output (up to 250 per data base) can be specified for each of the data bases. Thus the orders

```
* show 2
* show set 8 2
```

refer to the last set and set 8, respectively, and both make the system display (up to) two records from each data base; and the order

```
* print wonder 2, mirror 1, poems 3
```

makes the system output (up to) two records of the data base WONDER, one of MIRROR, and three of POEMS. The order refers to the last set and the output is sent to the lineprinter.

Individual records can also be selected. Thus the orders

```
* show r 3,4,5
* show r 3 to 5
```

both make the system display, for each data base, the third, the fourth, and the fifth record of those referred to by the last set; and the order

```
* print poems r from 4
```

makes the system print all the POEMS records of the last set except the first three.

Records referred to in sets can be skipped. The three orders below are equivalent

```
* show r 1,11,21,31
* show r 1 to 31 step 10
* show 4 step 10
```

In the CCL mode the 3RIP-symbol I is a synonym to STEP.

Normally the records will be output in ascending record number order within each data base. However, they will be output in the opposite order if the modifier REVERSE is included. REVERSE will usually also affect the selection of records. Thus the order

* show 2 reverse

will cause the last two records of those hit within each data base to be displayed.

If no record specification is given in a SHOW or PRINT order applied to a search result the values of a control variable NR will govern the number of records to be output. On entry to the OWN and MENU modes the values are set to zero, and on entry to the CCL mode they are set to 5 for SHOW and to 50 for PRINT. However, in both the modes OWN and CCL the values of NR can be changed in a DEFINE order. If the value associated with a command is set to zero the system will issue a prompt for each data base referred to by the set given or implied in the order.

In the EDIT sub-mode of OWN the commands SHOW and PRINT are applied to 3RIP text files and not to sets. This is also done in the unrestricted OWN mode if no sets have been formed, or if the modifier INFILE is included in the order. Thus the result of EDIT mode order

* show swift r lap#, from yahoo

will be the same as that of the unrestricted OWN mode order

* show infile=swift r lap#, from yahoo

Assuming SWIFT to be a 3RIP text file (and thus sorted on the names of the records) all its records with names beginning with LAP will be displayed as well as all the records from YAHOO to the end of the file.

If the record specification R LAP#, FROM YAHOO had been omitted the system would have prompted for a specification.

Format specification

SHOW and PRINT output of search results can be formatted according to any one of up to fifteen sets of formats. One of them is the default and will be used if no format specification is included in a SHOW or PRINT order. However, orders such as the following may be given:

* show format 5

* print mirror 10 format 5

* show 2 format person "Persons: __, " 5,2 text 1,2,2

The first two of the orders cause formatting to be done according to the fifth set of available formats. The third order causes a new set of data base output formats to be created and used. An explanation of the format specification in the third order is given in the chapter DEFAULTS AND FORMATS.

A format specification can also be included in SHOW orders applied to 3RIP text files that are not data bases:

* show infile=swift r all format lilliput images

This order causes all the records of the file SWIFT to be shown in the manner specified by format control record LILLIPUT of the file IMAGES.

The format specifications in the orders above can also be given in DEFINE orders, but then the default output formats would be changed.

In the CCL mode the 3RIP-symbol FORMAT may be abbreviated to F.

Sort specification

Sort keys for the output of data base records can be specified in one of three ways: in a predefined format (available on entry to 3RIP), in a DEFINE order, or in a SHOW or PRINT order. However, the output will not be sorted if the modifier SORT is omitted. Thus

* show 10 sort

will cause output to the terminal to be sorted according to the current sort keys, and with

* print sort=person,chapter

the records of the last set will be sorted on the contents of the fields denoted by the format labels PERSON and CHAPTER.

PRINT output destination

Output can be sent to 3RIP text files or to ordinary (ASCII) text files with the command PRINT. Thus the order

* print set 5 textfile=hits sort=person

will make the system write the records of set 5 onto the ASCII textfile HITS sorted on the contents of the fields labelled PERSON, and

* print poems r 2,4,5 outfile=myfile

will copy the specified POEMS records of the last set onto the 3RIP text file MYFILE (POEMS records may be copied, see the System Manual: 7.8), and finally an order such as

* print infile=oldfile outfile=newfile r all

will copy the entire file OLDFILE onto the file NEWFILE. The output files will be created if they do not already exist.

In the CCL mode OUTFILE is not recognized, and the 3RIP-symbol DISK can be used instead of TEXTFILE.

DEFAULTS AND FORMATS

The command DEFINE serves a number of purposes. It is recognized in the OWN and the CCL modes, and it can be used to set or change defaults, to create output formats for data base records, to change control parameters, and to create order records.

Default labels

There are two default labels, the default search label and the default thesaurus label. Their initial values are given for each user by his entry record. The default search label can be changed with

```
* define search=person
```

and both the default labels can be changed with an order such as

```
* define search=text,person
```

The arguments after SEARCH= shall be search labels specifying the default search label and the default thesaurus label, respectively.

In the CCL mode FL is a synonym to SEARCH, and in the OWN mode the command DEFINE can be omitted.

File specifications

Four different files can be specified in DEFINE orders:

INFILE	the default input file,
OUTFILE	the default output file,
TEXTFILE	the default text output file, and
THES	the current thesaurus.

The files associated with INFILE, OUTFILE, and THES must be 3RIP text files (i.e. they can be processed only within 3RIP), and the file associated with TEXTFILE must be an ordinary (ASCII) text file. Examples of orders defining files are

```
* define infile=master.dat outfile=master.dat
```

making the 3RIP file MASTER.DAT the default 3RIP file for input as well as output, and

```
*define thes=thesaurus.abc textfile=results
```

making the file THESAURUS.ABC the current thesaurus and the ordinary text file RESULTS the default text output file.

DISK and TEXTFILE are synonymous in the CCL mode, and OUTFILE is recognized only in the OWN mode where the command DEFINE may be omitted.

Sort specifications

Sort keys can be specified with an order such as

```
* define sort=person,chapter
```

where PERSON and CHAPTER are format labels. Output of data base records will be sorted on the contents of the fields labelled PERSON and CHAPTER if a SHOW or PRINT order is given with the modifier SORT but without a complete sort specification (see the chapter RECORD OUTPUT).

Sort keys given in a DEFINE order will override sort specifications given in predefined formats, but after the order

```
* define sort=
```

the sort keys of the predefined formats become available again.

In the OWN mode the command DEFINE can be omitted.

Number of records to be shown or printed

In the OWN and CCL modes orders such as

```
* define nr=2  
* define nr=2,250  
* define nr=0,0
```

can be given. The first number after NR= specifies the default number of records per data base to be output in response to SHOW orders applied to search results, and the second number specifies the corresponding number for the command PRINT.

Setting a default to zero will make the system prompt for a record specification for each data base hit by the set referred to by the corresponding output command.

In the OWN mode the command DEFINE can be omitted.

Format specifications

On entry to 3RIP there is a sequence of predefined record output formats for each of the available data bases. The formats of each of the sequences are numbered 1 to p ($p < 16$), and the default formats for the different data bases all have the same number. The default format number is 2 and p is 3 in the 3RIP demonstration setup. The default can be changed with an order such as

```
* define format 3
```

where 3 is the new default format number, indicating the formats to be used when processing SHOW or PRINT orders without format specification.

Creating the predefined output formats is the responsibility of the manager of a 3RIP system, as they should be tested and described before they are made available to other users. The predefined formats can be very complex and specify an intricate layout, and they can also specify break points giving the user the option to skip record parts.

However, if format labels have been defined by the manager (see pp 41-42) then any user can define simple output formats. Thus, using the demonstration setup the order

* define format text

can be given defining a new format, to which the next available format number is assigned. If there are fifteen formats already then the old format 15 will be exchanged for the new one. However, it is also possible to specify a number for the format. The format above specifies each of the record parts labelled TEXT to be output on a line of its own. Output produced with the format would be of the form:

MIRROR 1:20

The King immediately fell flat on his back, and lay perfectly still; and Alice was a little alarmed at what she had done, and went round the room to see if she could find any water to throw over him. However, she could find nothing but a bottle of ink, and when she got back with it she found he had recovered, and he and the Queen were talking together in a frightened whisper - so low, that Alice could hardly hear what they said.

The King was saying "I assure you, my dear, I turned cold to the very ends of my whiskers!"

To which the Queen replied "You haven't got any whiskers."

Another example of a format definition is

```
* define format chapter "Chapter: " 15,2 person "Actors: _," 1,2
text "_ " 1,2,1 noid
```

It should be noted that no RETURN was entered between 1,2 and TEXT. The output produced with the format would be of the form:

Chapter: Looking-Glass House

Actors: White Queen, White King

The King immediately fell flat on his back, and lay perfectly still; and Alice was a little alarmed at what she had done, and went round the room to see if she could find any water to throw over him. However, she could find nothing but a bottle of ink, and when she got back with it she found he had recovered, and he and the Queen were talking together in a frightened whisper - so low, that Alice could hardly hear what they said.

The King was saying "I assure you, my dear, I turned cold to the very ends of my whiskers!"

To which the Queen replied "You haven't got any whiskers."

A format specification must consist of:

the 3RIP-symbol FORMAT,
optionally a format number,
one or more label specifications, and
optionally the 3RIP-symbol NOID.

A format number must be an integer between p+1 and 15.

A label specification shall consist of

a format label,
optionally a character string, and
optionally up to three positive integers.

The optional character string (usually given within quotes) specifies a label header and a label separator. The former is to be inserted before the first of the record parts named by the label, and the latter is to be inserted between consecutive parts. The empty string is the default value for the header as well as for the separator. If there is an underscore character (_) in the character string, then the header is the part to the left of the first underscore in the string, and the separator is the part to the right of the underscore, otherwise the entire string is the label header. In the second format specification above "Actors: " is the label header associated with the format label PERSON, and comma followed by space is the label separator; and for the format label TEXT the empty string and a string of four spaces serve as header and separator, respectively.

The three optional integer values denote

start column (counted from the end of the label header),
line changes before output of the label header, and
line changes before output of the label separator.

The default for each of the values is one. However, defining a label separator changes the default of the third value, line changes between consecutive parts, to zero. This is illustrated by the second label specification of the second format definition above.

Formats specified without the 3RIP-symbol NOID cause a record identifier to be inserted at the beginning of each record output. The identifier consists of the name of the record's data base and two ordinal numbers, one giving the record number within set and data base and the other giving the number of the record within the data base.

In the output examples given above line folding was done automatically (with a current line length of 72 characters). The automatic line folding is an option controlled by the manager of the system, and if a POEMS record had been output it would have been disabled, as the format label specifications for POEMS in the demonstration setup specify the layout to be preserved for the record parts labelled TEXT. The label separator associated with TEXT in the second format (four spaces) would not be disabled, however.

In addition to the data base output formats there is another format which is applied when records of other 3RIP files are output. This format can be changed with orders such as

```
* define format myformat myfile
```

The order causes the record MYFORMAT to be fetched from the file MYFILE, and if it specifies a legal format then the default gets changed.

In the CCL mode the 3RIP-symbol format may be abbreviated to F, and in the OWN mode the command DEFINE may be omitted (in the MENU mode it must be omitted).

Page size

It is possible to adapt 3RIP to the characteristics of different terminals with orders such as

```
* define page=63
* define page=40,24
* define page=79,0
```

The numbers after the equal sign specify line length and number of lines, respectively. If the latter number, n say, is not zero, then output to the terminal of more than n-1 lines will be interrupted once for every n-1 lines. The system will issue the prompt

Continue? /YES/

at each interrupt.

In the CCL mode the 3RIP-symbol OS is a synonym to PAGE, and in the OWN mode the command DEFINE can be omitted.

Editor control characters

Two characters, normally ESCAPE and @, serve as editor delimiter and editor initial. Their functions can be transferred to other characters, however. The OWN mode order (where DEFINE can be left out)

```
* define edit=%
```

assigns the delimiter function to the character %, and the order

```
* define edit= ! ^
```

makes ! and ^ delimiter and initial, respectively.

Commands with default forms

Default forms can be specified for the 3RIP commands SHOW, PRINT, OPEN, CLOSE, LIST, TRACE, SAVE, STATUS, and ANALYSE. Thus the order

```
* define show 2 reverse
```

will specify a default form of the command SHOW, making the orders

```
* show
```

```
* show 2 reverse
```

equivalent until the default form is redefined or deleted with the order

```
* define show
```

A default form of any of the commands above is created if an order consisting of DEFINE followed by the command and its arguments is given, and later orders consisting of DEFINE followed by the command will redefine the default form or delete it. The latter happens if no arguments follow on the command.

Order records

Orders consisting of nothing but the command DEFINE make the system prompt for the name of an order record, for the name of its file, and for the orders to be stored in the record.

Similarly, orders such as

```
* define zu befehl
```

```
* define here-we-go-again
```

cause the order records ZU and HERE_WE_GO_AGAIN to be formed containing orders entered in response to prompts from the system. The order record ZU will be stored on the file BEFEHL, HERE_WE_GO_AGAIN will be stored on the default order file, and the orders

```
* run zu befehl
```

```
* run here-we-go-again
```

will lead to the execution of the order sequences created under the control of the DEFINE orders above.

It should be noted that the system sometimes tries to process erroneous DEFINE orders (e.g. format specifications without the necessary initial symbol FORMAT) as orders to create order records.

DELETING

In the unrestricted OWN mode deletions can be done with the command DELETE (or its synonym PURGE) and the editing command X. The latter can only be applied to structures in primary storage. It is used to delete (parts of) records or text variables. DELETE on the other hand is, unlike X, recognized in all the command modes. Primarily it is applied to sets, but in the OWN mode and to a limited extent in the CCL mode it can be used on records in 3RIP text files.

Deleting sets

In all modes except the EDIT sub-mode (where no sets are recognized) orders such as

- * delete
- * delete from 15
- * delete to 8, 13 to 17, walrus, 10
- * delete all
- * delete all poems
- * delete poems from 12

are applied to sets. The first order causes the last set to be deleted, the next three delete the sets specified in the orders (WALRUS is assumed to be the name of a set), and the last two delete all references to the data base POEMS from the indicated sets.

In the CCL mode the command DELETE can be shortened to DEL (or PUR).

Deleting records

In the OWN mode orders such as

- * delete r
- * delete r lap#, from yahoo
- * delete r lap#, from yahoo outfile=swift

can be given. Orders without a file specification such as the first two refer to the default output file, OUTFILE. However, if no such file is defined a prompt for the name of a 3RIP text file will be issued by the system. In any case the first order makes the system prompt for a record specification. The orders lead to the deletion of the specified record(s) from an implicitly or explicitly given 3RIP text file.

In the CCL mode order records (containing format specifications, saved searches, et c) can be deleted from the default order file. This is done with orders such as

- * delete r my#

The order deletes all records with names beginning with MY from the order file.

Records in primary storage can in the OWN mode be deleted with orders of the form

- * x r yahoo, laputa
- * x r all

where YAHOO and LAPUTA are record names. However, an order such as

- * put yahoo swift

does not only write the record YAHOO onto the file SWIFT but deletes it from primary storage as well.

Recovery of deleted records

Records deleted from 3RIP text files by mistake can in the unrestricted OWN mode as well as the EDIT sub-mode be resuscitated with a sequence of orders such as

- * infile=p25753.run outfile=p25753.run
- * get backup defaults put
- * get backup formats put

The first order specifies the file P25753.RUN (the order file associated with the password ALICE) to be the default file for input as well as output, the second order causes a backup copy of the deleted record DEFAULTS to be read from the file and written back onto it, and the third order repeats the procedure for the record FORMATS. If the modifier ORIGINAL had been used instead of BACKUP then the oldest record versions would have been fetched. However, if the file had been reorganized (with the command PACK or the 3RIP utility PACK) after the deletion of the records, then recovery would not have been possible.

EDITING

File handling and editing of records is possible in the unrestricted OWN mode or its submode EDIT. In the unrestricted mode the system may for some orders need additional information to be able to decide whether an order refers to sets or to 3RIP text files. In the EDIT submode where neither sets nor 3RIP-symbols irrelevant to editing or file handling are recognized this does not happen.

Editing of records in primary storage is done in the same manner as in earlier 3RIP versions, but with regard to file handling there are some changes:

1. The command TYPE is no longer recognized. The commands SHOW and PRINT shall be used instead, the former sending record output to the user's terminal, and the latter directing it to the lineprinter (default), to an ordinary text file, or to a 3RIP text file.
2. Records can no longer be deleted from 3RIP text files with the command X. DELETE (or its synonym PURGE) followed by the 3RIP-symbol R shall be used instead. The command DELETE is associated with the default output file, OUTFILE.
3. Record and file specifications may be given directly in SHOW, PRINT, DIR, and DELETE orders.
4. Format specifications can be given in SHOW and PRINT orders.

This is illustrated by the following OWN mode orders:

1. * edit
2. * define infile=swift outfile=jonathan
3. * define format=lilliput,images
4. * dir r all
5. * show r yahoo format=brute,images
6. * get yahoo x f 3,2 put
7. * delete r y# outfile=swift
8. * print r lap# textfile=math
9. * dir summary infile=jonathan r from y
10. * search

The effects of the orders are:

1. 3RIP enters the EDIT submode.
2. The 3RIP text files SWIFT and JONATHAN become the default files for input and output, respectively (the command DEFINE is redundant in the order).

3. The format specified by the record LILLIPUT on the file IMAGES becomes the default format for the output of records from 3RIP text files that are not data bases (here the command DEFINE may be omitted, and space may be used instead of the equal sign and the comma).
4. 3RIP shows a complete record directory for SWIFT, the default input file.
5. The record YAHOO from SWIFT is displayed in the format specified by the record BRUTE of the file IMAGES.
6. 3RIP reads the record YAHOO from SWIFT, deletes the contents of the second subfield of its third field, and writes the modified record onto the default output file, JONATHAN.
7. 3RIP deletes all records with names beginning with Y from the file SWIFT (if the file specification had been omitted the records would have been deleted from the default output file, JONATHAN, instead).
8. All SWIFT records whose names begin with LAP are written onto the ordinary text file MATH in the default output format LILLIPUT (if the file specification had been omitted the records would have been output on the lineprinter).
9. 3RIP displays a summary of a record directory of the JONATHAN records covered by the name interval FROM Y.
10. 3RIP enters the SEARCH submode.

Incomplete orders are handled in the same manner as in earlier 3RIP versions, i.e. the system prompts for the information it needs.

PRIVATE COMMAND VOCABULARIES

In the unrestricted OWN mode individual 3RIP-symbols can be renamed or deleted. This is done with the command CHANGE in orders such as

- * change infile to input
- * change outfile to output
- * change tform to
- * change pack to

The first two of the orders rename the 3RIP-symbols INFILE and OUTFILE, and the latter two delete the symbols PACK and TFORM from the current command vocabulary.

Synonymous symbols can also be defined with CHANGE. This is done with orders such as

- * change and to "*=and=et"
- * change or to "+=or=ou"
- * change not to "-=not=and not=sauf"

The string after TO containing the synonyms separated by the character = must be enclosed within quotes. The first of the synonyms in the lists (i.e. *, +, and -) become the normal forms shown by the system in its responses (e.g. in set directories or in help texts referring to the commands).

There are a few restrictions to the command CHANGE:

1. the symbol = cannot be altered;
2. the symbol corresponding to STOP (EXIT) in the normal OWN mode command vocabulary cannot be deleted;
3. symbols naming field labels (i.e. search or format labels) cannot be deleted;
4. symbols naming the available data bases cannot be deleted, and if data base usage is being logged on an account file then they cannot be altered; and
5. the constituents of symbol phrases must exist within the command vocabulary as individual symbols (examples of such constituents in the OWN mode vocabulary are AND and NOT forming the phrase AND NOT, . . and . forming . . ., and ... and WS forming ... WS).

The current command vocabulary can be saved with an order such as

* outsym my very.own

causing the entire vocabulary (with the exception of field labels and data base names) to be stored in the record MY on the file VERY.OWN. This command vocabulary can later be activated with the order

* getsym my very.own

Neither field labels nor data base names will be changed by this order.

All normal processing of private command vocabularies should be done with the commands CHANGE, PUTSYM, and GETSYM, as they are designed to preserve the integrity of the vocabularies. However, if a non-standard character set is to be used, then the name of the character set record specifying it (see the System Manual: 7.6.3) should be entered in the first subfield of field one of the vocabulary record defining the private vocabulary.

ADVICE TO THE 3RIP MANAGER

The device RIP

3RIP cannot be run unless four files from the 3RIP system tape have been copied onto the logical device RIP. The files are

- 3RIP.EXE the main program;
- 3RIP.MSG the help texts and other messages of the system
(corresponding to MESSAG.DAT in earlier versions);
- 3RIP.PSW the 3RIP file holding the password records associated with
the demonstration system and the passwords OWN and LEWIS into
the OWN mode, MENU and CARROLL into the MENU mode, and CCL
and ALICE into the CCL mode (all password records must reside
on this file instead of the file PASS.DAT of earlier
versions); and
- ALICE.MAS the control file associated with the passwords OWN, CCL,
MENU, LEWIS, ALICE, and CARROLL (it is also the control file
of the 3RIP demonstration system).

On a TOPS-10 system RIP can be made into a globally known ERSATZ-device, or else the monitor command ASSIGN can be used making it known to the job being run. On a TOPS-20 system RIP can be made into a locally or globally known device name.

RIP should also hold the other files of the demonstration setup, i.e. the data bases WONDER.BAS, MIRROR.BAS, and POEMS.BAS, the inverted files WONDER.INV, MIRROR.INV, and POEMS.INV, and the vocabulary file, CAR.ALP, associated with them. The demonstration setup of older 3RIP versions should not be used.

The NEWS file

The order

* news

is equivalent to

* show infile=rip:3rip.new format=newsform

Both make the system issue the prompt "Records: /ALL/", and the default response makes the system display all the records of the file RIP:3RIP.NEW in the format specified by the record NEWSFORM on the current control file.

On the control file ALICE.MAS there is a a format record NEWSFORM adapted to the presentation of the contents of the file 3RIP.NEW residing on the system tape. This file (or a file with the same name serving its purpose) should be copied onto the device RIP, and NEWSFORM should be copied onto the control file being used.

The names of the records of 3RIP.NEW specify dates (e.g. 1981-07-14 for July 14, 1981). The manager may well add records to 3RIP.NEW, and the output format may be changed, but news records must reside on this file, the name of the format must be NEWSFORM, and the name conventions for the news records should be observed, with the name of a news record being the day of its entry into the file. If that is done, and the response "from 1981-09-01" is given to the prompt following on a NEWS order, then the system will display the news entered after August 31, 1981.

Field label mappings

3RIP can distinguish between up to thirty field labels identified externally by names and internally by numbers between 2 and 31. They are specified in entry records where the name of each field label is stored in field 8 in the subfield having its number. Thus in the entry record ENT_OWN (associated with the password OWN giving access to the demonstration system) the contents of field 8 are:

F 8,2 TEXT
F 8,3 PERSON
F 8,4 CHAPTER
F 8,5 TITLE
F 8,6 COUNT
F 8,10 SPEAKER

The field labels are referred to by their numbers in the data base control records, where some or all of them become search labels and/or format labels. The search labels relevant to a data base are given by field 9 of its control record (i.e. by the inversion arguments), and the format labels are given by field 10 (unused in earlier 3RIP versions).

The following description of the contents of field 10 should be added to section 7.3 Control records for BASE files in 3RIP - a System Manual:

Field 10: Format label mappings

Here fields and/or individual subfields in the records of the data base are associated with one or more format labels. When a label is used to govern output the record parts labelled by it are displayed, printed, or written in the sequence given or implied here, and normally line folding is done by the system after substituting single spaces for series of control characters (carriage return, line feed, tabs, et c) in the labelled subfields.

- F 10,1: The numbers of format labels whose labelled parts are to be output without translating control characters (cf the command ORIG in section 6.3). The integers between 2 and 31 giving these numbers shall be separated by comma or space.
- F 10,n: The fields and/or subfields associated with the format label numbered n ($1 < n < 32$). Fields shall be given by their numbers and individual subfields shall be given in the form A.B, where A and B are integers indicating field and subfield numbers, respectively.

This is illustrated below by the contents of field 10 in the data base control records MIRROR and POEMS of the control file ALICE.MAS of the demonstration system:

<u>Label</u>	<u>Subfield</u>	<u>MIRROR</u>	<u>POEMS</u>
	1		2
TEXT	2	5,6,7	6
PERSON	3	3	4
CHAPTER	4	2.2	2.2
TITLE	5		2.3
COUNT	6		3.3,3.4
SPEAKER	10	4	5

The integer 2 in F 10,1 of the control record POEMS refers to the label TEXT, and because of it user-defined output formats will not adulterate the layout of the poems in the data base POEMS.

Thesaurus files

Almost any 3RIP text file can be handled as a thesaurus file. It is for example possible to convert a conventional thesaurus into a thesaurus file. This has been done with thesaurus of the UNESCO data base IBE, and the pattern followed there may be used for other thesauri with each record in the file containing a term and its semantic neighbours, the name of a record being its term, and the record following the pattern (using conventional thesaurus nomenclature):

<u>Field</u>	<u>Subfield</u>	<u>Contents</u>	<u>Code</u>
2	1	the term itself	
3	1-	used for term	UF
4	1-	broader term	BT
5	1-	narrower term	NT
6	1-	related term	RT
7	1-	scope note	SN
10	1-	use term	USE

Thesaurus files can be created with the editing system of 3RIP, with prompted input under the control of a data entry record and the command CREATE, or if the thesaurus already exists in machine-readable form via the text entry format TFORM (see the System Manual: 6.1).

For machine-readable thesauri the following procedure might be used (the name of the thesaurus file to be created is assumed to be THES.ABC):

1. Convert the thesaurus to a TFORM file, THES.TFO, in the thesaurus pattern given above. In such a file the last of the terms shown in the DISPLAY THES example on page 22 would be of the form:

```

^R
^2fNATIONAL PROGRAMMES
^4fPROGRAMMES
^5fGOVERNMENT PROGRAMMES
^sNATIONAL REGIONAL PROGRAMMES
^6f109

```

2. Create a control record for a new data base, DUMMY:
 - * make dummy
 - * s f 2,1 \$thes.bas\$
 - * s f 2,5 \$thes.tfo\$
 - * s f 4,2 \$tfo_std\$
 - * put dummy alice.mas
3. Run the 3RIP utility ADDBAS creating THES.BAS.
4. Create an output format SORTHES, and use it to produce the thesaurus file THES.ABC (in a batch job unless it is small):
 - * make sorthes f 3 i \$2,1,39\$
 - * put sorthes,thes.sor
 - * format sorthes,thes.sor
 - * print sort r all infile=thes.bas outfile=thes.abc
 - * print r all infile=thes.abc format structure dump
5. Examine the lineprinter output of the thesaurus, probe into THES.ABC with the command DISPLAY THES, and use 3RIP's editor to rectify minor errors in the thesaurus file.

Account files

If the name of an ordinary text file is given in the first subfield of field 14 of the entry record being used, then the system will log usage statistics on this account file (which will be created if it does not exist on entry to the system).

Account files should be well protected as one of their primary purposes is to deliver input data to external programs computing fees to be levied on the usage of the system and/or the data bases that are available. One way to ensure this is to make account files inaccessible to all but their owners, and then have the DEC system program DAEMON grant the 3RIP program the right to append to the files.

3RIP writes one or more lines of variable length onto the account file

1. on entry to the system, when an account is opened;
2. on receiving an ACCOUNT order causing the current account to be closed and a new account to be opened;
3. on exit from the system, when the current account is closed;
4. when a search is saved with the command SAVE; and
5. when an order record is deleted.

Account lines referring to the same account all have the same system generated eight-digit identifier in the positions 2-9. Lines from different accounts will normally be intermingled in the file. They can be gathered with the DEC sort utility, however, if the identifier is the sort key. The lines are at most 120 characters including carriage return and line feed at the end.

An account line begins with one of five letters (B, T, U, S, or D) specifying its type. Below the contents and the layout of each line type is described:

- B-line: logging the opening of an account
 11-17: password transformation
 20-25: project number
 27-32: programmer number
 34-36: job number
 38-45: opening date in the form yy-mm-dd (e.g. 81-08-31 for the last of August, 1981)
 47-54: opening time in the form hh:mm:ss (e.g. 14:16:00 for 2.16 p.m.)
 56-118: account name, i.e. the name given in an ACCOUNT order, or, initially, the password transformation
- T-line: logging the elapsed time to be charged to the account
 11-18: 3RIP connect time in the form hh:mm:ss (e.g. 00:12:32 denoting 12 minutes and 32 seconds)
 20-27: cpu time in the form hh:mm:ss
- U-line: logging the data base usage to be charged to the account
 11-19: data base name (left justified and possibly truncated to the right)
 21-28: data base connect time in the form hh:mm:ss
 30-34: copy count (number of records output in the format STRUCTURE or copied into primary storage with GET or onto a file with PRINT OUTFILE or PRINT TFORM)
 36-40: SHOW count (number of data base records output with the command SHOW)
 42-49: SHOW weight (a computed measure taking both the data base and the formats used into consideration)
 51-55: PRINT count (number of records output with PRINT on the lineprinter or onto ordinary text files)
 57-64: PRINT weight
- S-line: logging the saving of a search
 11-18: date in the form yy-mm-dd
 20-27: time in the form hh-mm-ss
 29-91: name of the order record holding the search
- D-line: logging the deletion of an order record
 11-18: date in the form yy-mm-dd
 20-27: time in the form hh:mm:ss
 29-91: name of the deleted order record

A B-line without a matching T-line indicates an abnormally ended 3RIP run. The manager of the system should try to find its cause and take whatever corrective action is warranted.

For each output format there is a weight between 0 (default) and 1000.

For predefined formats the weights are given in the first subfield of field 5 of the corresponding format records.

For a user-defined data base output format the weight is given for each data base by the sum of the weights of the format labels used. The weight of a format label (default: 0) shall be given in field 12 of the data base control records, where the subfield given by the number of the label shall hold the weight. However, if the sum of the weights of the

used labels exceeds the value given in the first subfield of field 12 (default: 1000), then the latter value becomes the weight of the format for the data base.

Every time an output format is used when showing or printing a data base record the weight of the format is added to the SHOW weight or to the PRINT weight for the data base.

The entry records associated with the public passwords OWN, CCL, et c do not specify an account file. The password ACCOUNT may be used, however. It gives access to the demonstration system in the OWN mode, and makes it log usage on the file COUNT.DAT in the user's own file space. Thus a test file for external accounting programs may be generated. The weights for the predefined formats are 50 and 45 for WONDER and MIRROR, and 100 and 95 for POEMS; and the contents of field 12 in the data base control records are:

Label	Subfield	WONDER	MIRROR	POEMS
	1	50	50	100
TEXT	2	40	40	90
PERSON	3	5	5	5
CHAPTER	4	3	3	3
TITLE	5			4
COUNT	6			2
SPEAKER	10	5	5	5

Control file changes summarized

A few changes are needed to adapt existing control files to the new version of 3RIP. The affected record parts are

in entry records:

- F 5,1 Command vocabulary name (it shall either be SYM_OWN, SYM_CCL, or SYM_MENU or else the name of a new private command vocabulary record in the control file)
- F 8,2-31 Field label names, i.e. the names of search labels and/or format labels
- F 14,1 Account file name
- F 15,1 Default thesaurus file name
- F 15,2 Default thesaurus label number

in data base control records:

- F 10,1-31 Format label mappings
- F 12,1-31 Format label weights

in data base output format records:

- F 5,1 format weight

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